

Title (en)  
ULTRASONIC JOINING HORN

Title (de)  
ULTRASCHALL-FÜGEHORN

Title (fr)  
CORNET D'ASSEMBLAGE PAR ULTRASONS

Publication  
**EP 4129551 A1 20230208 (EN)**

Application  
**EP 22188610 A 20220803**

Priority  
JP 2021130090 A 20210806

Abstract (en)  
An ultrasonic joining horn disclosed herein can generate ultrasonic vibration in a predetermined vibration direction and includes a base portion, a stand portion that rises from an upper surface of the base portion, and a pressure contact portion formed of a plurality of protrusions that protrude from an upper surface of the stand portion. Each of the protrusions is formed into a pyramid shape or a truncated pyramid shape, the protrusions are arrayed, and when viewed from top, at least a portion of a peripheral edge of a portion in which the protrusions are arrayed has a zigzag shape. The zigzag portion is formed along at least one of the vibration direction and a perpendicular direction to the vibration direction. The upper surface of the base portion has an exposed surface on which the stand portion is not formed.

IPC 8 full level  
**B23K 20/10** (2006.01); **B23K 20/233** (2006.01)

CPC (source: EP KR US)  
**B06B 1/02** (2013.01 - KR); **B23K 20/10** (2013.01 - EP); **B23K 20/106** (2013.01 - EP KR US); **B23K 20/2333** (2013.01 - EP); **B23K 20/2336** (2013.01 - EP); **B23K 2101/36** (2018.08 - EP); **B23K 2101/38** (2018.08 - EP); **B23K 2103/10** (2018.08 - EP); **B23K 2103/12** (2018.08 - EP); **B23K 2103/18** (2018.08 - EP); **H01M 50/552** (2021.01 - EP); **H01M 50/562** (2021.01 - EP); **H01M 50/566** (2021.01 - EP); **Y02E 60/10** (2013.01 - EP)

Citation (applicant)  
• JP 2007330851 A 20071227 - TOYOTA MOTOR CORP  
• JP 2018069308 A 20180510 - PANASONIC IP MAN CORP

Citation (search report)  
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• [YA] JP 2015139780 A 20150803 - ADWELDS KK  
• [YA] JP 2007330851 A 20071227 - TOYOTA MOTOR CORP  
• [A] JP 2016052670 A 20160414 - NICHICON CORP  
• [A] US 2014255768 A1 20140911 - JANG SUNG-HWAN [KR]  
• [A] US 2020227877 A1 20200716 - NAKAMURA TOSHIHIRO [JP], et al

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 4129551 A1 20230208**; CN 115922047 A 20230407; JP 2023024043 A 20230216; JP 2024019281 A 20240208; JP 7397831 B2 20231213; KR 20230022122 A 20230214; US 11878361 B2 20240123; US 2023045159 A1 20230209; US 2024109149 A1 20240404

DOCDB simple family (application)  
**EP 22188610 A 20220803**; CN 202210927357 A 20220803; JP 2021130090 A 20210806; JP 2023204144 A 20231201; KR 20220095946 A 20220802; US 202217876020 A 20220728; US 202318535601 A 20231211